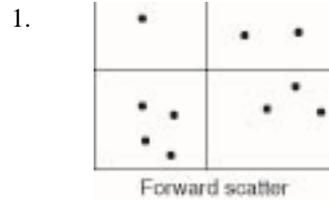


Chapter 1 Introduction to Immunology

Multiple-Choice Questions



Which quadrant in the figure contains the smaller cell(s) with more granularity?

- a. A
  - b. B
  - c. C
  - d. D
2. **CD11c+ cells are**
- a. macrophage
  - b. B cells
  - c. T cells
  - d. dendritic cells
3. **Apoptosis, also known as programmed cell death occurs when**
- a. the cell receives certain signals and then sends perforins to kill neighboring cells
  - b. the cell receives certain signals and digests its own DNA
  - c. the cell receives certain signals and digests its own membrane
  - d. none of the above
4. **CD 56+, CD 16+, and CD3- are markers used to characterize—**
- a. a macrophage
  - b. an NK cell
  - c. a dendritic cell
  - d. an eosinophil
5. **An antigen-specific cell is a**
- a. neutrophil
  - b. T or B lymphocyte
  - c. macrophage
  - d. NK cell
6. **A phagocytic cell is a(n)**
- a. platelet
  - b. T or B lymphocyte
  - c. macrophage
  - d. NK cell

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7. **When treated with IL-2, this cell becomes an LAK cell.**
  - a. neutrophil
  - b. T or B lymphocyte
  - c. macrophage
  - d. NK cell
  
8. **The first cell at the site of an infection is a(n)**
  - a. neutrophil
  - b. T or B lymphocyte
  - c. macrophage
  - d. NK cell
  
9. **The cell of the following cell types that is called a Kupfer cell when in the liver is**
  - a. neutrophil
  - b. T or B lymphocyte
  - c. macrophage
  - d. NK cell
  
10. **A pattern recognition receptor is(are)**
  - a. defensins and cathelicidins
  - b. unmethylated DNA, ss RNA
  - c. SALT
  - d. toll-like receptor
  
11. **An acute phase reactant involved in cardiac risk measurements is(are)**
  - a. defensins and cathelicidins
  - b. unmethylated DNA, ss RNA
  - c. SALT
  - d. C-reactive protein
  
12. **Antimicrobial peptides is(are)**
  - a. defensins and cathelicidins
  - b. unmethylated DNA, ss RNA
  - c. SALT
  - d. C-reactive protein
  
13. **A pathogen associated molecular pattern is(are)**
  - a. defensins and cathelicidins
  - b. Unmethylated DNA, ss RNA
  - c. SALT
  - d. C-reactive protein
  
14. **A secondary lymphoid organ is(are)**
  - a. defensins and cathelicidins
  - b. unmethylated DNA, ss RNA
  - c. SALT
  - d. C-reactive protein

15. **The innate immune system uses**
- PRR to recognize PAMP
  - PAMP to recognize PRR
  - PAMP to recognize surface mannose
  - surface mannose to recognize lectins on the bacteria
16. **CD19, 20, 21 are on these cells**
- macrophage
  - B cells
  - T cells
  - dendritic cells
17. **Which of the following is involved in a humoral immune response?**
- neutrophil
  - B lymphocyte
  - macrophage
  - NK cell
  - T cells
18. **Which of the following has a polymorphic nucleus**
- neutrophil
  - B lymphocyte
  - macrophage
  - NK cell
  - T cells
19. **Which of the following cells kills tumor cells and virally infected cells, not antigen specific, uses perforins**
- neutrophil
  - B lymphocyte
  - macrophage
  - NK cell
20. **The phagocytic cell that does not arrive first at the site of a chronic infection is the**
- neutrophil
  - B lymphocyte
  - macrophage
  - NK cell
  - T cell
21. **The cell of the following cells that has a specific regulatory subset is a**
- neutrophil
  - B lymphocyte
  - macrophage
  - T cell
22. **Each of the 12 types of these binds a different PAMP.**
- TLR
  - bacterial flagellin
  - tonsil
  - C-reactive protein

23. **An acute phase reactant is**
- TLR
  - bacterial flagellin
  - tonsil
  - C-reactive protein
24. **One of the pathogen-associated molecular pattern is**
- TLR
  - bacterial flagellin
  - tonsil
  - C-reactive protein
25. **A secondary lymphoid organ is**
- TLR
  - bacterial flagellin
  - tonsils
  - C-reactive protein
26. **A lectin is a**
- molecule that binds to neutrophils
  - molecule that binds lipids
  - molecule that binds carbohydrates
  - a molecule that causes apoptosis
27. **Which statement is correct?**
- Serum is formed after blood is allow to clot.
  - Serum is formed in blood after anticoagulants have been added.
  - Plasma is formed after blood is allowed to clot.
  - Clotting factors are no longer in plasma.
28. **Which one of these does not belong?**
- Kupfer cells
  - histiocytes
  - alveolar macrophages
  - dendritic cells
29. **Which cell is very active in antigen presentation?**
- dendritic cells
  - T cells
  - epithelial cells
  - LAK cells
30. **The process by which macrophage and neutrophils squeeze through the intact blood vessel is**
- opsonization
  - diapedesis
  - chemotaxis
  - phagocytosis

### Answer Key

1. a. A
2. d. dendritic cells
3. b. the cell receives certain signals and digests its own DNA
4. b. an NK cell  
C a dendritic cell
5. b. T or B lymphocyte
6. c. macrophage
7. d. NK cell
8. a. neutrophil
9. c. macrophage
10. d. toll-like receptor
11. d. C-reactive protein
12. a. defensins and cathelicidins
13. b. Unmethylated DNA, ss RNA
14. c. SALT
15. a. PRR to recognize PAMP
16. a. macrophage
17. b. B lymphocyte
18. a. neutrophil
19. d. NK cell
20. c. macrophage
21. d. T cell
22. a. TLR
23. d. C-reactive protein
24. b. bacterial flagellin
25. c. tonsils

- 26. c. molecule that binds carbohydrates
- 27. a. Serum is formed after blood is allow to clot.
- 28. d. dendritic cells
- 29. a. dendritic cells
- 30. b. diapedesis